

WHAT IS CLAIMED IS:

1. A discharge surface treatment method, comprising the steps of:

placing a green compact electrode, formed of compressed powder as a discharge electrode, adjacent to a workpiece;

generating a pulse current when an electric current from a power source is applied to an oscillator;

creating a pulse-type discharge between the discharge electrode and the workpiece, to form on a surface of the workpiece a film made of an electrode material or of a material obtained when the electrode material reacts to the discharge energy;

cutting off the output of the oscillator;

detecting a discharge voltage between the electrode and the workpiece; and

forcibly cutting off the output of the oscillator when a predetermined period of time has passed after detecting the discharge voltage to be less than or equal to the discharge detection voltage set value,

wherein the discharge detection voltage set value is set at a value about 5 to 20% lower than a power-supply voltage.

2. A discharge surface treatment method, comprising the steps of:

placing a green compact electrode, formed of compressed powder as a discharge electrode, adjacent to a workpiece;

generating a pulse current of a predetermined frequency when an electric current from a power source is applied to an oscillator; and

creating a pulse-type discharge between the discharge electrode and the workpiece, to form on a surface of the workpiece a film made of an electrode material or of a material obtained when the electrode material reacts to the discharge energy,

wherein a capacitor is connected in parallel with an oscillation circuit of the oscillator.

3. The discharge surface treatment method according to claim 2, wherein a reactance is connected in series with the oscillation circuit.